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DATE: March 27, 1972

TO : All Directors of Projects using Ionizing Radiation

FROM : R.C. Barrall, Director, Health Physics, Safety and Health

SUBJECT: Exposure Limit for Women.

The Stanford University Radiological Hazards Control Panel has established a new tentative limit for exposure of women to ionizing radiation. The new tentative limit is 500 mrem per year (one tenth of the previous limit.)

The National Council on Radiation Protection and Measurements recently recommended "During the entire gestation period, the maximum permissible dose equivalent to the fetus from occupational exposure of the expectant mother should not exceed 500 mrem.....The need to minimize exposure of the embryo and fetus is paramount. It becomes the controlling factor in the occupational exposure of fertile women ..... Despite the use of the permissive "should" terminology, the NCRP recommends vigorous efforts to keep exposure of an embryo or fetus to the very lowest practicable level"[1].

While the intent of the NCRP recommendation is protection of the fetus, the Stanford Panel noted the difficulty of administering an exposure limit which depends on knowledge of pregnancy. The Panel also felt an obligation to ensure against fostering employment discrimination based on age or marital status. In addition to the NCRP Report No.39, other recent literature on infants irradiated in utero was considered. It was the concensus of the Panel that:

1) The most practical means of reducing exposure during pregnancy is by reducing exposure of all women.
2) The occupational exposure of all women shall be limited to 500 mrem per year.
3) Those who are pregnant should take appropriate precautions to maintain exposure at the very lowest practical level and, in any case, below 500 mrem during the period of pregnancy.

Reviewing the records of (nearly 1000) film badge wearers at the University during 1971, we find only 3 women with reported exposure in excess of 500 mrem. One of these was exposed only in the course of work with diagnostic X-rays and thus the badge is indicative of exposure to the head and neck while the abdominal area was shielded with a lead apron. Thus, the new tentative limit can be adopted without serious impact on most projects.

If assistance in exposure control, review of shielding, etc. is desired, please call Health Physics on Ext. 2308.

1) NCRP Report No.39, p. 92-93 (1971).

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